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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/719,726

07/30/2001

Paul Phillip Van Saarloos

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EXAMINER

LU, TOM Y

ART UNIT

PAPER NUMBER

2621

DATE MAILED: 09/15/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/719,726

Applicant(s)

VAN SAARLOOS, PAUL PHILLIP

Examiner

Tom Y Lu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-8, 12-16, 17/12, 17/13, 17/14, 17/15, 17/16, 21-28, 32-41 and 44-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Swanson (U.S. Patent No. 5,465,147).

- a. Referring to Claim 1, Swanson discloses an interference signal (combination of radiation 18b' and 18a' is the claimed interference signal, column 6, lines 34-36) between light beams of short temporal coherence length respectively comprising a primary beam reflected or scattered from the object surface (17b' as shown in figure 2 reflected off region 1 is the claimed "primary signal", column 6, lines 13-15, column 5, line 59) and a reference beam (17a' is the claimed "reference beam", see figure 2, column 6, line 9), scanning a reference surface (reference scatterer 32 in figure 2 is the claimed "reference surface") in the path of said reference beam about a position (see figure 3 for point 1) at which said interference signal is generated (the combination of 18a' and 18b' is generated in the path of reference beam, see figure 2), which position is thereby indicative of the position of the object surface (point 1 is the indicative of the position of the object surface), and controlling said position of said reference surface to maintain

- a predetermined point in the range of said scanning at the indicative position (the predetermined point is the depth point in the range of ΔZ , see figure 3).
- b. Referring to Claim 2, Swanson discloses wherein said light beams of short temporal coherence length are derived by splitting a single initial beam (splitter 22, see figure 2).
 - c. Referring to Claim 3, Swanson discloses wherein said splitting is effected at a beam splitter at which the interference signal is formed by return of said light beams (the interference signal in Swanson is formed by return of light beams 17b' and 17a').
 - d. Referring to Claim 4, Swanson discloses wherein said reference surface comprises reflection or scattering means (reference scatterer 32).
 - e. Referring to Claim 5, Swanson discloses modulating said interference signal with a characteristic predetermined repetitive variation (see figure 8, columns 12, lines 14-24).
 - f. Referring to Claim 6, Swanson discloses wherein said modulation is effected by additionally dithering the position of reference surface (column 11, line 28-30).
 - g. Referring to Claim 7, Swanson discloses wherein said control said position of the reference surface is effected by dithering the reference surface about a location at which a peak interference signal is detected and maintaining said predetermined point at the indicative position in response to said peak interference signal (see figure 4B).

- h. Referring to Claim 8, Swanson discloses wherein said object is the cornea or iris of an eye (see column 12, line 9).
- i. With regard to Claim 12, see explanation in Claims 1 and 5.
- j. With regard to Claim 13, see explanation in Claim 6.
- k. With regard to Claim 14, see explanation in Claim 2.
- l. With regard to Claim 15, see explanation in Claim 3.
- m. With regard to Claim 16, see explanation in Claim 4.
- n. With regard to Claims 17/12, 17/13, 17/14, 17/15 and 17/16, see explanation in Claim 8.
- o. With regard to Claim 21, see explanation in Claim 1.
- p. With regard to Claim 22, see explanation in Claim 2.
- q. Referring to Claim 23, Swanson discloses wherein said source is superluminescent diode (column 8, line 17).
- r. With regard to Claim 24, see explanation in Claim 3.
- s. With regard to Claim 25, see explanation in Claim 4.
- t. With regard to Claim 26, see explanation in Claim 5.
- u. With regard to Claim 27, see explanation in Claim 6.
- v. With regard to Claim 28, see explanation in Claim 7.
- w. Referring to Claim 32, Swanson discloses wherein said scanning means comprises one or more resonant, piezo or galvaometer scanning means (a scanner inherently contains at least one or more resonant, piezo or galvaometer scanning means).

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- x. Referring to Claim 33, Swanson discloses said detecting means includes a silicon diode detector (image detection and processing unit 52 inherently contains a silicon diode detector).
- y. With regard to Claim 34, see explanation in Claim 12.
- z. With regard to Claim 35, see explanation in Claim 13.
- aa. With regard to Claim 36, see explanation in Claim 14.
- bb. With regard to Claim 37, see explanation in Claim 23.
- cc. With regard to Claim 38, see explanation in Claim 15.
- dd. With regard to Claim 39, see explanation in Claim 16.
- ee. With regard to Claim 40, see explanation in Claim 7.
- ff. With regard to Claim 41, see explanation in Claim 17.
- gg. With regard to Claim 44, see explanation in Claim 32.
- hh. With regard to Claim 45, see explanation in Claim 33.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 9-11, 18-20, 29-31 and 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swanson in view of Fountain (U.S. Patent No. 5,162,641). The arguments in Paragraph 1 above as to the applicability of Swanson are incorporated herein.

- a. Referring to Claim 9, Swanson discloses tracking the position of a human eye, at column 12, lines 8-9, and performing image scanning of the eye. However, Swanson does not explicitly disclose such tracking is used for surgery. Fountain at column 2, lines 65-68 and column 3, lines 1-7, teaches tracking movement of the eye, and determine the position of the eye for laser operating procedure. At the time the invention was made, a person of ordinary skill in the art would have been motivated to do this because Fountain teaches in laser delivery system, and particularly in system for delivering a surgical laser beam toward to target tissue, which is being operated upon, it is important to either to having the target totally immobilized or quickly follow or tack optically the target, column 1, lines 14-19.
- b. Referring to Claim 10, Fountain discloses wherein surgical procedure is a surgical laser procedure in which a laser beam is focus successively at said points in the tissue (see figure 4 in Fountain).
- c. Referring to Claim 11, Fountain discloses wherein said surgical procedure comprises one or more of intrastromal photorefractive keratectomy, Laser-in-situ-Keratormileusis procedures or laser optical breakdown in phacoemulsification.
- d. With regard to Claim 18, see explanation in Claim 9.
- e. With regard to Claim 19, see explanation in Claim 10.
- f. With regard to Claim 20, see explanation in Claim 11.
- g. With regard to Claim 29, see explanation in Claim 9.
- h. With regard to Claim 30, see explanation in Claim 10.
- i. With regard to Claim 31, see explanation in Claim 11.

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j. With regard to Claim 42, see explanation in Claim 18.

k. With regard to Claim 43, see explanation in Claim 19.

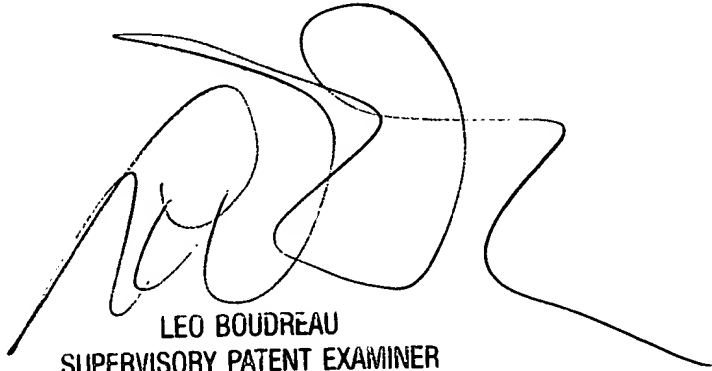
Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom Y Lu whose telephone number is (703) 306-4057. The examiner can normally be reached on 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Y. Lu



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